



In re Application of:
Peter Michael Edic et al.

Serial No.: 10/625,361

Filed: July 23, 2003

For: METHOD AND APPARATUS FOR
CORRECTING MOTION IN
IMAGE RECONSTRUCTION

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Group Art Unit: 2882

Examiner: Song, Hoon K.

Atty. Docket: GERD:0051/YOD/RAR
120520-2

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February 28, 2006 Date	 Stephanie Shamgar

PRE-APPEAL BRIEF REQUEST FOR REVIEW

In accordance with the Official Gazette Notice of July 12, 2005, Appellants submit this Pre-Appeal Brief Request for Review. This Request is filed along with a Notice of Appeal.

In the Office Action, the Examiner rejected claims 1-17, 21-32, 36-51 and 55. Appellants submit that all of pending claims 1-55 are allowable in their present form and respectfully request reconsideration of the above-referenced application in view of the following remarks.

First Rejection Under 35 U.S.C. § 102

The Examiner rejected claims 1-2, 4, 22-23 and 37-38 as anticipated by U.S. Patent No. 6,535,570 (the "Stergiopoulos reference"). Appellants traverse this rejection.

The Stergiopoulos reference fails to disclose each element of independent claims 1, 22 or 37. For instance, claims 1 and 22 recite "acquiring a projection data set during *one or more slow rotations or a slow partial rotation of a CT gantry* about a dynamic object" (emphasis added).

Appellants note that claim 37 similarly recites a gantry which rotates slowly. The Stergiopoulos reference fails to disclose such a gantry and, therefore does not anticipate claims 1, 22, or 37.

Acquisition of projection data during slow rotations appears to be absent from the Stergiopoulos reference. The passage relied upon by the Examiner as showing this element makes no mention of the rotational speed of the gantry. The only passage of the Stergiopoulos reference identified by the Appellants which mentions the rotational speed of the gantry indicates that the gantry rotates at 3/4 of a second per rotation, i.e., “ $T=0.75$ second period of rotation”. Stergiopoulos, col. 18, lines 5-7. Appellants believe such rotational speeds are typical of conventionally operated CT gantries and are not *slow* as would be understood by the layperson or by one skilled in the art with the benefit of the present Application.

In responding to this point the Examiner maintains that “one skilled in the art would understand the speed is less than current CT gantry speed of which is more than two revolutions per second. Accordingly, applicant’s gantry speed is considered slow...” Final Office Action, p. 10. However, no basis is provided by the Examiner for the assertion that current gantry speeds are less than or equal to 0.5 seconds. Furthermore, the determination of whether the Stergiopoulos reference discloses slow rotation should be ascertained in view of those systems contemporary with the Stergiopoulos reference at the time of filing, i.e., February 2001, not with current systems. As noted in the Stergiopoulos reference, the given rotational speed was for a Siemens x-ray CT Somatom 4 medical imaging system. Stergiopoulos, col. 18, lines 3-5. No evidence was provided that such a commercially available system was considered slow at the time of filing of the Stergiopoulos reference. Instead, absent evidence to the contrary, it is reasonable to assume that the disclosed Siemens system had a gantry rotation speed consistent with other contemporaneous systems. Furthermore, the lack of discussion regarding gantry rotational speed in the remainder of the Stergiopoulos reference and the stated objective of implementation in *existing* CT systems indicate that the technique of Stergiopoulos is implemented in CT systems rotating at conventional speeds, not in systems where the gantry rotates slowly, as recited in claims 1, 22, and 37. Stergiopoulos, col. 2, lines 33-36.

Further, even if the Stergiopoulos reference was believed to disclose a slowly rotating gantry, it does not disclose a slowly rotating gantry as one of ordinary skill in the art having the benefit of the present disclosure would understand. In particular, the present application, by way of example, describes a slowly rotating gantry as one that takes 10 or more seconds to complete a

rotation. Application, p. 11, lines 10-12. One of ordinary skill in the art having the benefit of this description would not conclude that a gantry rotation in $T=0.75$ seconds was slow while a rotation in $T=0.5$ seconds was not slow as both speeds are more than 10 times as fast as the described exemplary embodiments. While the Appellants recognize that claims are to be given their broadest reasonable interpretation during examination, such interpretation must be consistent with the specification. *See* M.P.E.P. § 2111. In the present rejection, the Examiner has chosen to interpret the claims in a manner that is unreasonable in view of the specification.

Second Rejection Under 35 U.S.C. § 102

The Examiner rejected claims 1-2, 4, 22-23 and 37-38 as anticipated by U.S. Patent No. 6,252,924 (the “Davantes reference”). Appellants respectfully traverse this rejection.

The Davantes reference fails to disclose each element of independent claims 1, 22 or 37. In particular, the Davantes reference also fails to disclose a slowly rotating gantry. Therefore, the Davantes reference also fails to anticipate any of independent claims 1, 22, or 37.

In particular, the Davantes reference appears to be silent with regard to the rotational speed of the gantry during data acquisition. The passage relied upon by the Examiner as showing this element makes no mention of the rotational speed of the gantry. Furthermore, the only passage of the Davantes reference identified by the Appellants which mentions the rotational speed of the gantry indicates that the gantry rotates at conventional speeds or faster, i.e., “embodiments having gantry 12 rotation speeds *sufficiently fast* to permit reconstruction of views from a full 360° view angle with reduced image artifacts are possible”. Davantes, col. 5, lines 21-24. Emphasis added. Clearly the Davantes reference contemplates not slower gantry rotations, but faster. In general, however, the Davantes reference does not appear to indicate that data acquisition at other than conventional CT gantry rotation speeds is contemplated.

For at least these reasons, Appellants assert that the cited references fail to disclose all of the features recited in the instant claims. As such, Appellants respectfully assert that independent claims 1, 22, and 37 and their dependents are not anticipated by the Stergiopoulos or Davantes references. Appellants respectfully request reconsideration and allowance of the instant claims.

First and Second Rejections Under 35 U.S.C. § 103

The Examiner rejected independent claims 7, 25, and 42 under 35 U.S.C. § 103(a) as unpatentable over Stergiopoulos in view of U.S. Patent No. 6,002,738 (the “Cabral reference”) and in view of Davantes and Cabral. Appellants respectfully traverse these rejections.

Independent claims 7, 25, and 42 generally recite a slowly rotating gantry. As noted above, both the Stergiopoulos and Davantes references fail to disclose such a slowly rotating gantry. The Cabral reference, likewise, fails to disclose such a slowly rotating gantry and the Examiner does not allege that it does. Therefore, in view of the preceding arguments, the combination of the Cabral reference with either the Stergiopoulos or the Davantes reference fails to disclose the recited elements of claims 7, 25, and 42. As such, Appellants respectfully assert that independent claims 7, 25, and 42, as well as the claims depending therefrom, are not obvious in view of the cited combinations of references. Therefore, Appellants respectfully request reconsideration and allowance of the instant claims.

Third Rejection Under 35 U.S.C. § 103

The Examiner rejected dependent claims 5-6, 10-11, 40-41 and 45-46 under 35 U.S.C. § 103(a) as unpatentable over Stergiopoulos in view of U.S. Patent No. 4,284,896 (the “Stonestrom reference”). Appellants respectfully traverse this rejection.

Dependent claims 5-6, 10-11, 40-41 and 45-46 are believed to be allowable on the basis of their dependency from respective allowable independent claims, as discussed above, as well as for the subject matter separately recited in these dependent claims. Accordingly, Appellants respectfully request withdrawal of the Examiner’s rejection and allowance of the present claims.

Furthermore, Appellants note that the Examiner has not provided an objective suggestion or teaching supporting the proposed combination of references. Indeed, the motivation provided by the Examiner appears to be entirely absent from the cited references and instead appears to only be found in the teachings of the present application. *See* Application, p. 3, line 24 to page 4. line 4. The Federal Circuit has warned that the Examiner must not “fall victim to the insidious effect of a hindsight syndrome wherein that which only the inventor taught is used against its teacher.” *See In re Dembiczak* 50 U.S.P.Q. 2d 52 (Fed. Cir.1999). (quoting *W.L. Gore & Assoc.*,

Inc. v. Garlock, Inc., 220 U.S.P.Q. 303, 313 (Fed. Cir.1983)); *see also In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988) (explaining that one cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention).

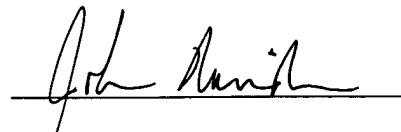
It is clear, however, that the Examiner has indeed relied exclusively on hindsight in formulating the present combination of references, neither of which teach any advantage of slow gantry rotation but one of which is *20 years older* than the other and which, therefore, describes what in 1979 was likely an average or fast system but which, 20 years later, is comparatively slow. No aspect of either of these references suggests the desirability of slow gantry rotation and the only rationale for such a combination of references is an intent to deprecate the claimed invention relying on the teachings of the present application, not the cited art. Such a use of hindsight is impermissible, as set forth above. The reviewers are referred to the Response mailed on September 7, 2005 at pages 18-19 for further discussion of this point. Appellants respectfully assert that dependent claims 5-6, 10-11, 40-41 and 45-46 are not obvious in view of the cited combinations of references. Therefore, Appellants respectfully request reconsideration and allowance of the instant claims.

Conclusion

In view of the above remarks, Appellants request allowance of the pending claims. If a telephonic interview will speed this application toward issuance, the Examiner is invited to contact the undersigned at the telephone number listed below.

Date: February 28, 2006

Respectfully submitted,



John M. Rariden
Reg. No. 54,388
FLETCHER YODER
P.O. Box 692289
Houston, TX 77269-2289
(281) 970-4545